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In the Spotlight

Passport to Knowledge Gears Up to Go *Live From the Rainforest*

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This may be the year when teachers and students all across the United States will travel with Passport to Knowledge (PTK) to visit rainforests in Brazil and elsewhere around the planet. A new collaboration between PTK and RSPAC will provide NASA and the CAN/CAT/LTP partners with updated information about Live From the Rainforest. The project will remain true to PTK's unique model of providing educational materials and learning experiences which are "100% video, 100% hands-on, and 100% online."

Online

The RSPAC team has been working to inaugurate "discuss-lfrf," PTK's online mail list that allows educators and others to discuss the project and share ideas with each other and project staff. The "updates-lfrf" list, also hosted by RSPAC, is a weekly e-zine which debuted January 7 and will run through the end of the 1997-98 school year. This online newsletter will give subscribers the latest project news, provide information about key dates, tell readers how to receive biographies and field journals from researchers and others working with Live From the Rainforest, and let teachers know how to order the Teacher's Guide, Multimedia Kit, and other materials.

The project's Web site will debut in February 1998, well in advance of the live April videos, and will become truly interactive for six weeks surrounding the programs (slated for April 7, 14, and 21, 1998). PTK is very pleased to announce that the site is being designed by Brad Johnson and Julie Beeler of Second Story Interactive, which previously created "Virtual Galápagos" and "Virtual Antarctica" for TerraQuest. (See **http://www.terraquest.com/galapagos.**) These excellent sites combine very accessible information with a graphic design which makes them a pleasure to visit, yet they are still a quick download over regular-speed connections. The result is the richness of information found in PTK's Live From Mars and Live From Antarctica 2 sites combined with the design sense and ease of navigation of Virtual Galápagos. It is hoped that the new Live From the Rainforest *(continued on page 2)*

News Bytes

Wordsearch Now Available in JavaShop -- Fun, Educational Addition for LTP Web Sites

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The JavaShop would like to introduce its newest online applet, Wordsearch, a computerized version of the popular puzzle often found in newspapers and children's magazines.

With the Wordsearch applet, Web site designers can draw keywords from a site's articles and other content and include them in a fun, online game.

"The Wordsearch applet allows Web designers to stress the importance of certain words, terms, or phrases – things that appear in an article – by including them in an interactive game that comes at the end of the article," according to John Hinkle, a Web programmer with RSPAC. The applet was designed by Kelly Brown, a former RSPAC Web programmer.

To find out more about Wordsearch, visit RSPAC's JavaShop online at **http://developers.ivv.nasa.gov/tech/javashop/wordsearch**.

Other JavaShop applets available to Learning Technologies Project (LTP) groups include The Scroller (which allows paragraphs of scrolling text), Headline Scroller (which allows a few words of scrolling text), Java Hangman, and Java Animator. The applets can be found on the Developers' Workshop Web site, located at **http://developers.ivv.nasa.gov/tech/javashop**.

This bulletin will also be available in Adobe Acrobat format on the Developers' Workshop Web site at: **http://developers.ivv.nasa.gov/collab/pubs/bulletin/**

Nothin' but Net

RSPAC Graphics Design Team Honored in National Magazine

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The Remote Sensing Public Access Center's (RSPAC) graphics design team was honored in the December issue of *Graphic Design: USA* magazine, where they were named a winner of the publication's national award for Web site design. The award is presented annually and is selected from among the best commercial artistic entries nationwide.

The RSPAC team consists of Linda McClung, Charles Glover, and Brian Maze, under the direction of Melissa Waybright. The team produces all graphics for NASA's Observatorium and serves many Learning Technologies Project (LTP) groups as well.

The winning design is the entry page of "Our Sun," an article featured in NASA's Observatorium. It can be seen at **http://observe.ivv.nasa.gov/nasa/exhibits/sun/sunframe.html**. The article was written by RSPAC senior staff member G. Siegfried Kutter, Ph.D., and Albert Opp, Ph.D., a former NASA senior scientist.

"This award gives RSPAC's graphics design team national recognition from design leaders across the country, and is an example of the successful teamwork that is demonstrated daily by the group," according to Waybright, the team leader. "It represents the level of design ability that is possible at RSPAC."

The winning entry was featured in the December issue of *Graphic Design: USA*, which has a circulation of more than 30,000 among graphics industry leaders. There were approximately 10,000 entries, and less than seven percent were named winners. Each RSPAC designer received an embossed certificate in recognition of this achievement.

In the Spotlight **(cont.)**

will continue to push the envelope in the development of educational Web sites. RSPAC will continue to be a partner in the mail list interactions and in supporting "Researcher Q&A" and the online discussion groups.

Also in development is an online collaborative project (similar to "The Great Planet Debate" from Live From the Hubble Space Telescope or "Weather Worlds" from Live From Mars) that will provide an incentive for students to get out and conduct field research in their own environments. They will learn to survey past changes, compare the environment's character and level of biodiversity with that of the rainforests seen on camera, or read about these studies online.

Hands-on

The full text of hands-on activities related to the project will be in the printed Teacher's Guide and/or the Multimedia Kit, both of which are in the final stages of compilation. While teachers would like to have these materials now, it's important to have complete integration of the video, online, and print components. That means designing them all to reflect the evolving realities of the other elements, and that takes time.

Here's a preview of what the Guide will have: a planetary perspective on why rainforests developed where they did on our Earth; why there's a pattern to rainforests and deserts; exercises to bring forest food webs to life for elementary and middle school classes; activities showing why and how plants and animals adapt to their environments; a novel project nicknamed "Sneaker Biology" which dramatizes the logic of biological classification; remote sensing activities; and several interdisciplinary extensions to mathematics, geography, social studies, and language.

The Guide will also provide literary sidebars from Charles Darwin and George Washington. There will be personal anecdotes from some of the researchers to be seen on camera, high school teachers, and student rainforest explorers, full background on the entire project, hints for successful implementation, and all the other tried and true PTK Guide elements.

The Multimedia Kit will include a poster, sample online materials, an hour-long orientation video (introducing rainforests and showing veteran PTK teachers modeling hands-on activities from the Guide), and much more.

Video

The three Live videos will feature real-time interaction between sites in the rainforest (along the Amazon) and schools across North America, as well as extensive documentary reports on the daily life and work of the researchers, and graphics and close-up footage of the plants and creatures of the rainforest.

PTK is delighted to announce the participation of Dr. Thomas Lovejoy, counselor for biodiversity at the Smithsonian Institution and the originator of the collaborative Smithsonian/Brazil "Biological Dynamics of Tropical Forest Fragments" (BDTFF) project, headquartered in Manaus, in the state of Amazonas, Brazil. For nearly 20 years, this project has gathered scientific data about how tropical rainforests change as the land around them is developed, and has served as a kind of classroom for a whole new generation of field biologists. Lovejoy is an ornithologist and has studied rainforests *(continued on page 4)*

Highlights & Happenings

Take Off! Holds Internet Training Sessions, Lists Other Recent Accomplishments

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The Web Page

The Massachusetts Corporation for Educational Telecommunications' (MCET) Web team digitized four additional Career Cards for the Web page. The new cards will be available online in January.

Feedback from users regarding the new Take Off! Web page has been positive. Although some low-end users are experiencing longer download times due to the increased number of graphics and animations on the site, the navigation design is particularly appreciated for ease of use and the logical grouping of related information. The EdAlliance team at Brown University will conduct an extensive evaluation of the new site and report the findings to Project Team shortly. The registration process through the major search engines is underway.

News from the Schools

All the new Internet accounts for the teachers at Danvers High School are operational and three training sessions have been held: use of e-mail, newsgroups, and interactive forums and chat rooms on the Internet; introduction to Web browsing using Netscape and Internet Explorer; and introduction to Web searches, indexes, and open-text search engines. Successful strategies for searching the Web will be the topic of the training scheduled this month. The curriculum was developed by Mark Ekster, technical coordinator for the Danvers School District, with the assistance of the project director. The teachers will receive the training on-site using the technology available. The local technology advisor will be consulted so that there is support for additional training and troubleshooting.

Discussions have been held with the manager of the air traffic control tower at Beverly Airport. Danvers High School would like to take advantage of its proximity to the airport to boost students' interest in the aviation program through guided tours of the facility. The project director is also exploring additional resources available through a local flight school, such as a visit to the interior of an aircraft combined with a visit to the control tower.

The Young Eagles Club of Randolph Junior/Senior High School was featured in the December 11, 1997, issue of the *Brockton Enterprise*, a local publication. The club was started by Ken Goldblatt, leader of the Take Off! project at this site, four years ago, and received a jump-start when the school was selected to participate in the Take Off! project as a demonstration site. In Ken's words, "That was the kind of impetus that got us started doing a lot of things. With the [NASA] grant we were able to buy a flight simulator." The simulator soon became very popular with students, and the teacher started to consider other aspects of aviation to incorporate into a club format. The Eagles Club received a free subscription to *Sport Aviation* from Chapter 279 of the Experimental Aircraft Association of Hansom, MA. A NASA grant is providing support to upgrade computer memory and purchase a flight yoke for the simulator.

"Human Factors in Aviation" Project at MIT

The MCET project director met with the MIT team that is involved in research in the general field of aviation safety and automation, exploring how people work together in the air transportation system: pilots, air traffic controllers, dispatchers, etc. In particular, they are focusing on how the sharing of information affects the balance of authority, how pilots and controllers negotiate, when they challenge or overrule each other, to what extent they compete and collaborate, and how this interaction is affected by the quality and quantity of information available to them. The research is aimed at assessing the feasibility of improving the flow of information available to pilots in order to increase their ability to make informed decisions and improve safety.

The new lab will have a pilot's station with a flight simulator containing an extensive database of flight missions, each connected to the corresponding air traffic information on the air traffic controller's system. The MIT team is available to host groups of students participating in the Take Off! project and guide them through a hands-on demonstration of the system's capability in the spring of 1998, as soon as the lab becomes operational.

LDAPS Completes LEGO Control Lab and Motorized Bubble Machine

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The LEGO Data Acquisition and Prototyping System project at Tufts University recently completed version 16.2 of the LEGO Control Lab software, which is available at **ftp://ftp.rspac.ivv.nasa.gov/ldaps/pub** and is used with LabVIEW software.

There are now three paradigms of graphical programming with LDAPS software. Large icons and few options comprise a style of programming for K-3, block-diagram style programming is for 4-college, and a third block-diagram/data display combination is available for scientific and engineering experiments where data is collected from sensors (also suitable for 4-college).

The LDAPS software will be used at Tufts this semester in an undergraduate mechanical engineering course that involves data acquisition principles. The class is taught by Professor Martha Cyr, LDAPS team member and director of the new Center for Engineering Educational Outreach, of which LDAPS is a part. It will also be used in a graduate-level course, Learning through Computer-Based Projects, in the education department taught by Professor Uri Wilensky. This *(continued on page 4)*

Highlights & Happenings (cont.)

course will help future teachers become aware of the kinds of technological tools available to them in the classroom.

To date, over 50 elementary and middle school teachers in 11 schools are involved with the LDAPS project, and 117 others in 19 countries have downloaded the software.

Work continues inside and outside of the classroom with teachers who are incorporating LEGO engineering projects into their lessons. A big hit is the LEGO motorized bubble machine, designed and built by LDAPS member Ben Erwin. The machine gets students involved in all sorts of discussions, ranging from gear ratios to what makes the bubbles float around the room.

Work also continues on the formation of the Engineering Club at an after-school center in a less-affluent community in South Boston. Six students in grades 5 through 8 are currently enrolled.

The most complicated aeronautical LEGO model is the airplane (complete with motorized LEGO hot-wire wing maker). Anyone daring enough to build it can find the instructions at **http://ldaps.ivv.nasa.gov/Temp/Instructions/**.

Athena Posts Material Created by Educators Online

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In January, SAIC completed the editing and posting of material created by educators during writing workshops held in July 1997. Materials have been posted periodically, most recently on January 5, 1998. The new topics are "Whales and Our Oceans," "The Goddess Athena," "Predicting the Weather," "Exploring Landforms in South America," "Tropical Cyclones," "Adopt-a-Country on the Pacific Rim," a revision of weather fundamentals in Adopt-a-City, and, most recently, "Learning about Wetlands." All of Athena is available at **http://www.athena.ivv.nasa.gov**, and at two other servers maintained by the Superintendent of Public Instruction in Washington State. To see a list of newer materials, select "What's New?" on the homepage.

The Athena site is being used regularly in the classroom. SAIC will now complete and post various instructional materials drafted by educators and scientists.

If you would like to be on the LTP Bulletin mailing list, please send e-mail to Scott Gillespie at: sgillespie@rspac.ivv.nasa.gov, or write to: BDM/RSPAC, 100 University Drive, Fairmont, WV 26554. Phone: (304) 367-8324, fax: (304) 367-8211.

In the Spotlight (cont.)

and conservation issues across the planet. And this project was just recently selected as one of the first groups of investigators on Mission to Planet Earth's (MTPE) Large-scale Biosphere-Atmosphere (LBA) project in Amazonia, a pioneering Brazilian-NASA experiment to unify ground truth and orbital data.

The Smithsonian scientists now working in and around Manaus are a young, eclectic, and very international group of enthusiasts who will personify in their engaging personalities and various research specialties the fascinating and complex process of studying the rainforest.

The Amazon is the world's largest rainforest, and the BDTFF project is also the world's largest controlled environmental experiment. While the videos and online and print materials will present data from rainforests all around the planet and ensure that the learning experiences connect back home, the participation of the unique Smithsonian/Brazil project will highlight one of the most dramatic and interesting environments on Earth.

There is the possibility of the participation of Brazilian students in one or more of the real-time interactions, making Live From the Rainforest a truly international learning adventure. Stay tuned for details of this very exciting probability!

For up-to-date information on Live From the Rainforest, please consider subscribing to *updates-lfrf* by sending e-mail to *listmanager@passport.ivv.nasa.gov* and writing in the message body:

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subscribe updates-lfrf
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For additional information, please contact PTK project director Geoff Haines-Stiles (ghaines@quest.arc.nasa.gov) or executive producer Erna Akuginow (ptkea@aol.com), or phone (908) 273-4108.

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